FIG. 1

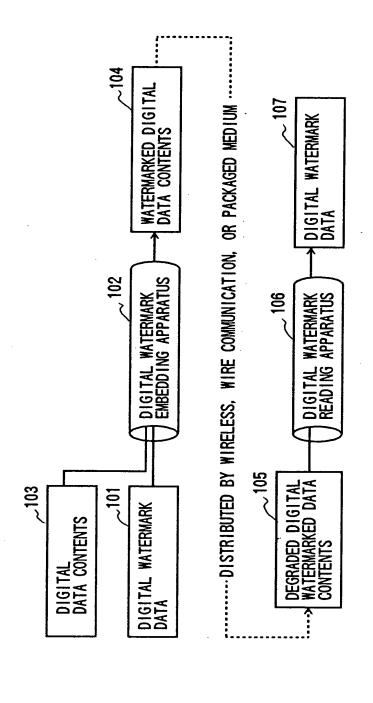
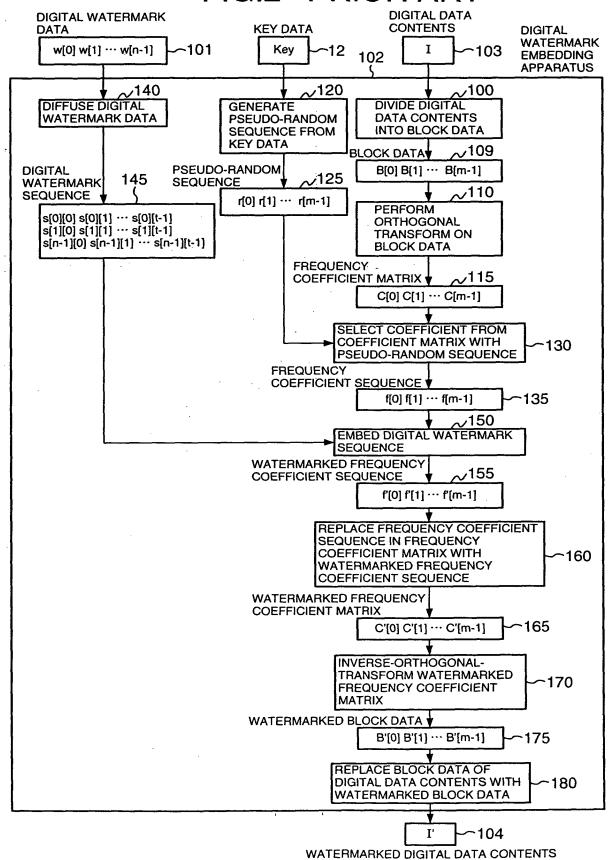


FIG.2 PRIOR ART



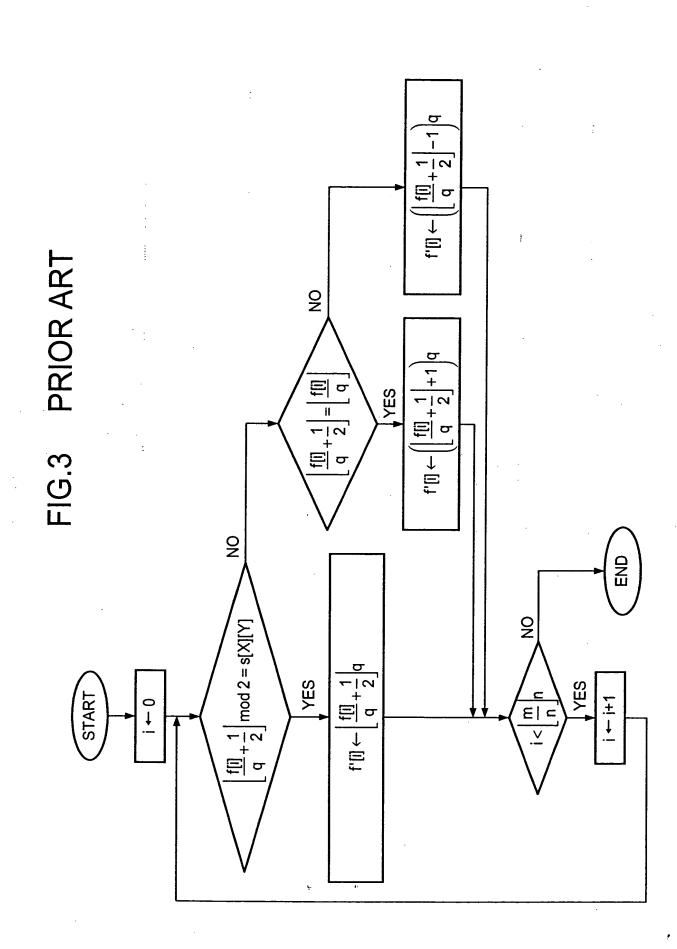
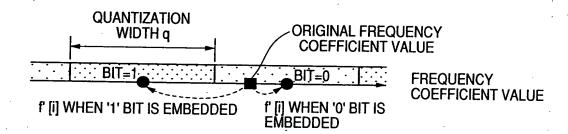


FIG. 4 PRIOR ART



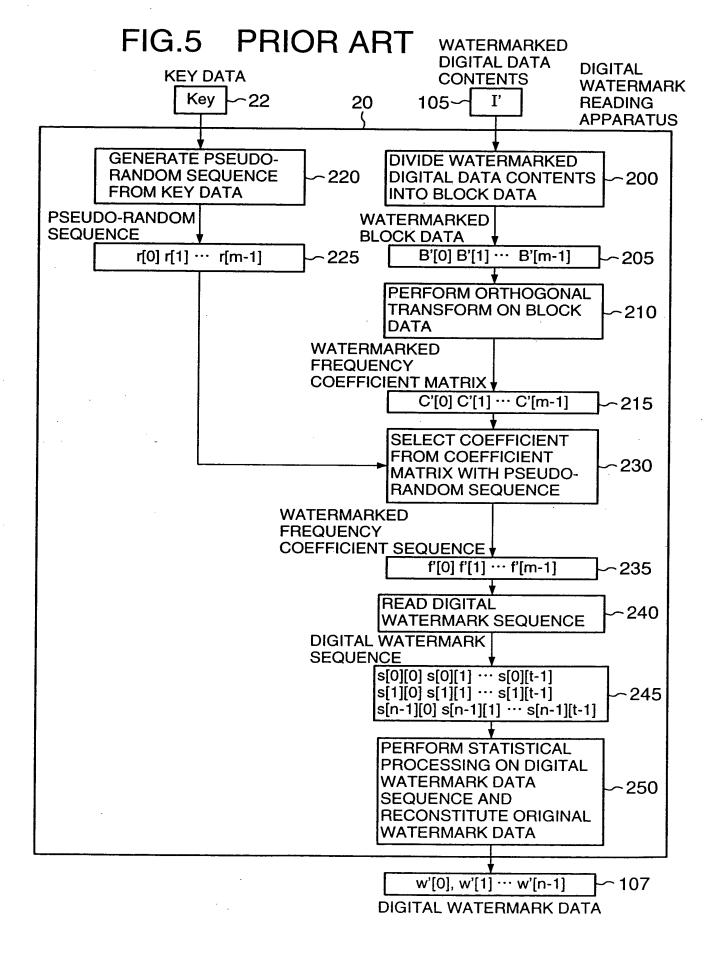


FIG.6 PRIOR ART

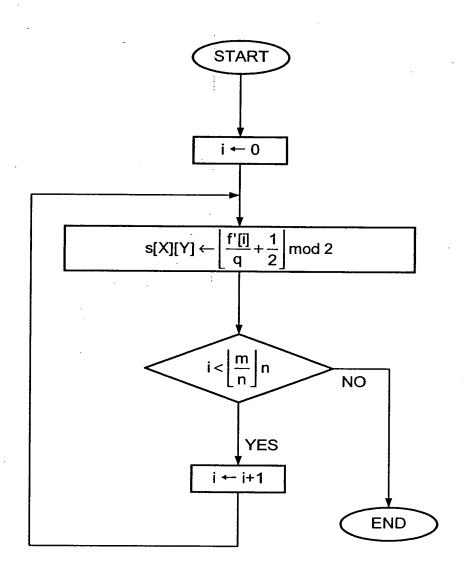


FIG.7

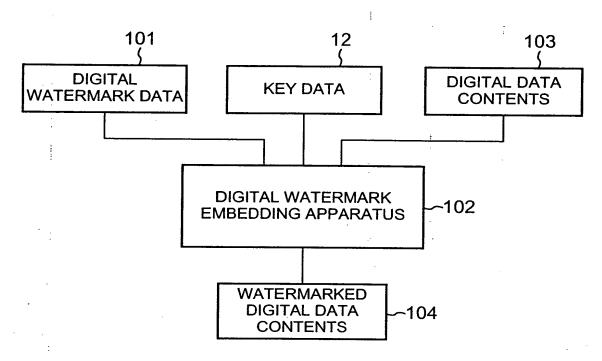


FIG.8

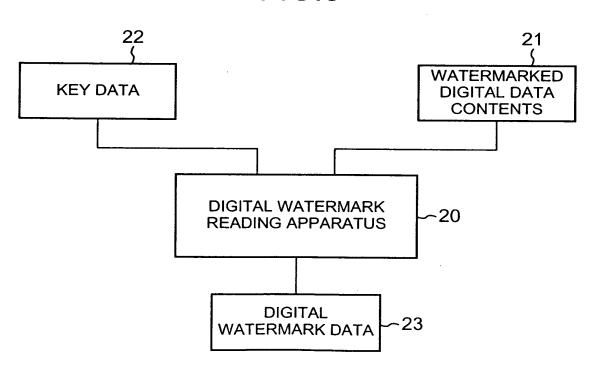
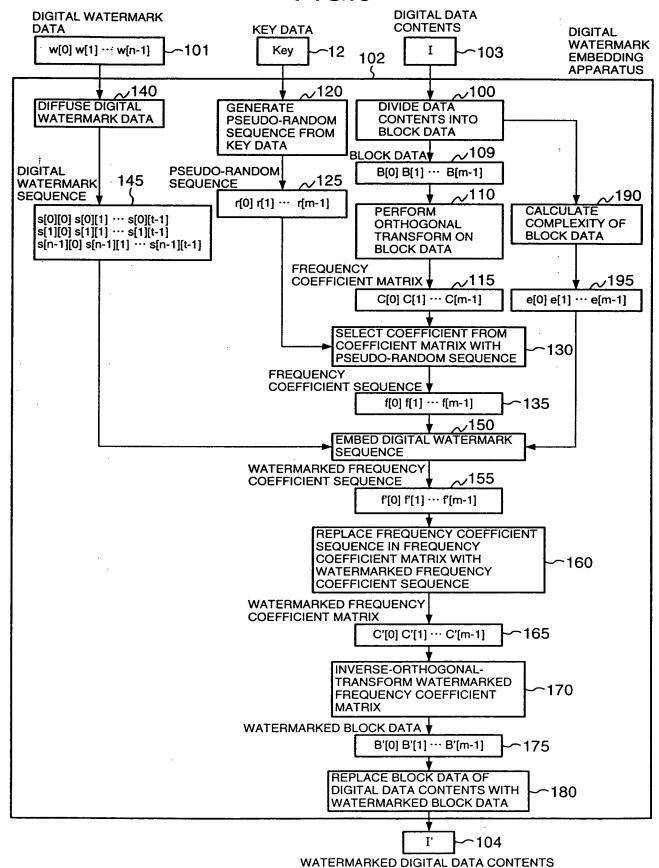
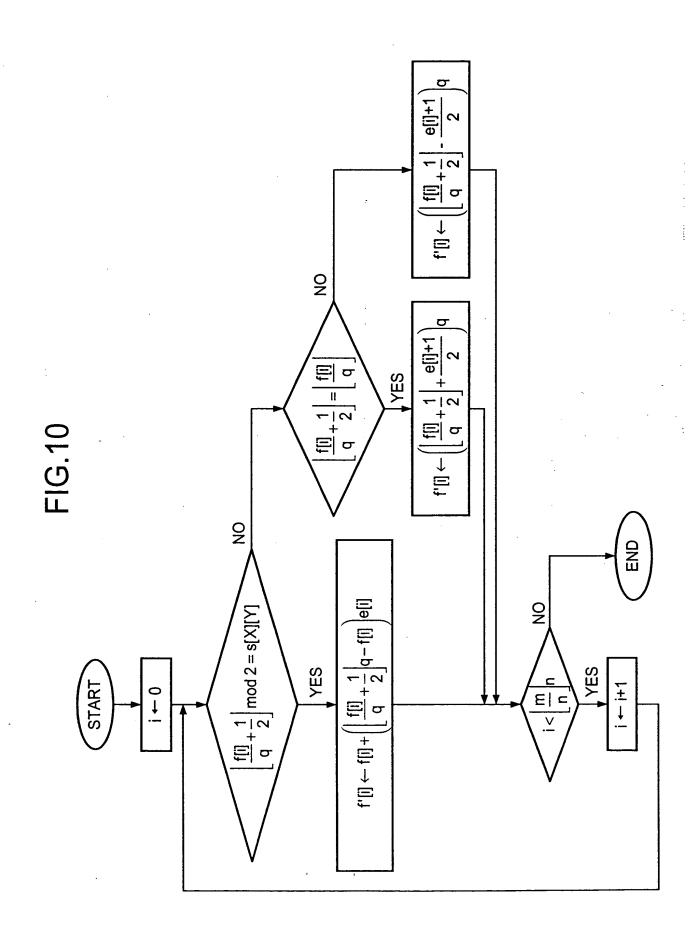


FIG.9





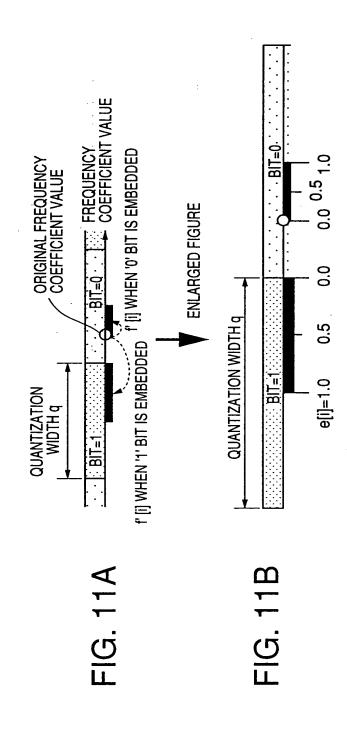


FIG.12

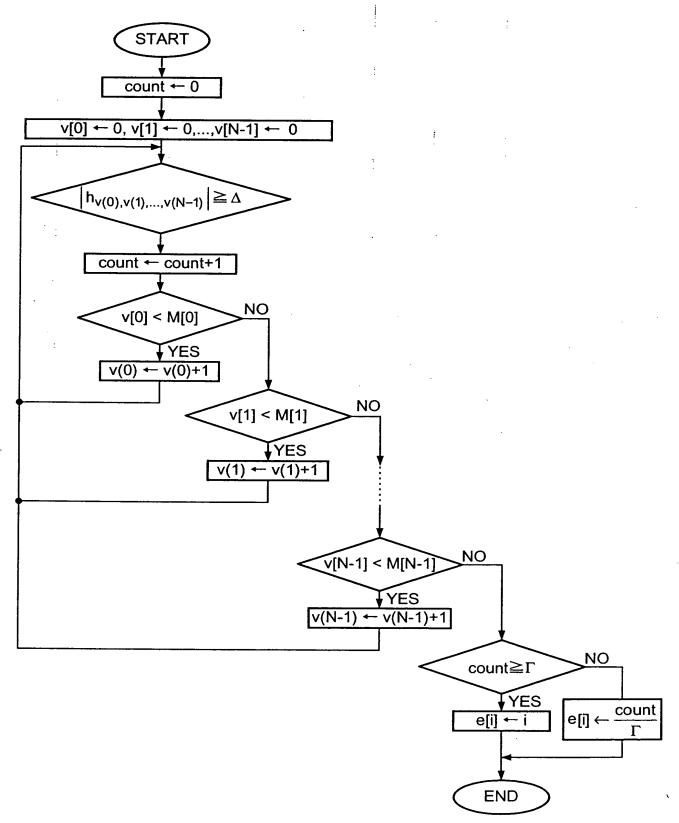
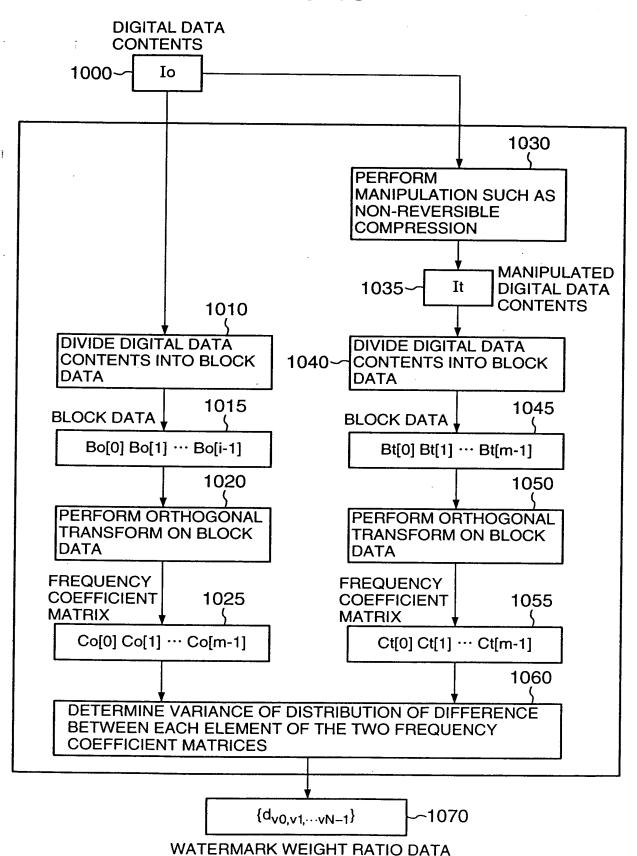


FIG.13



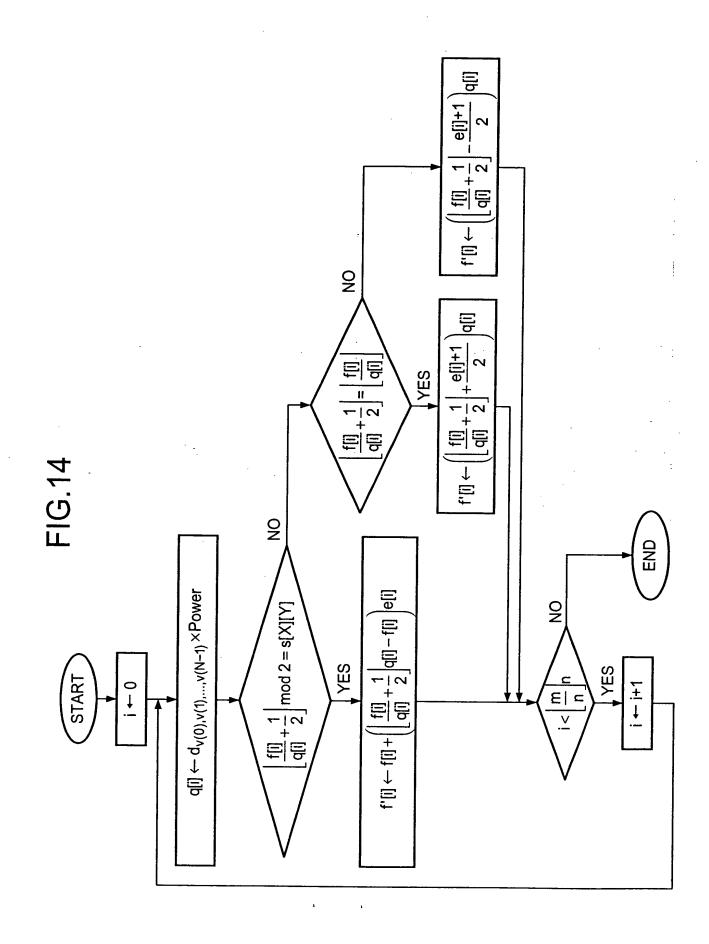
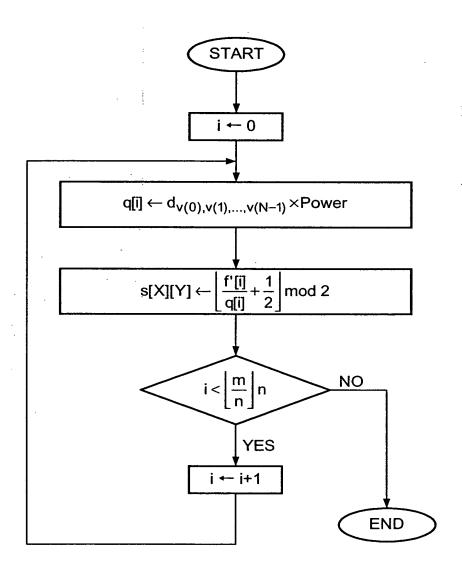


FIG.15



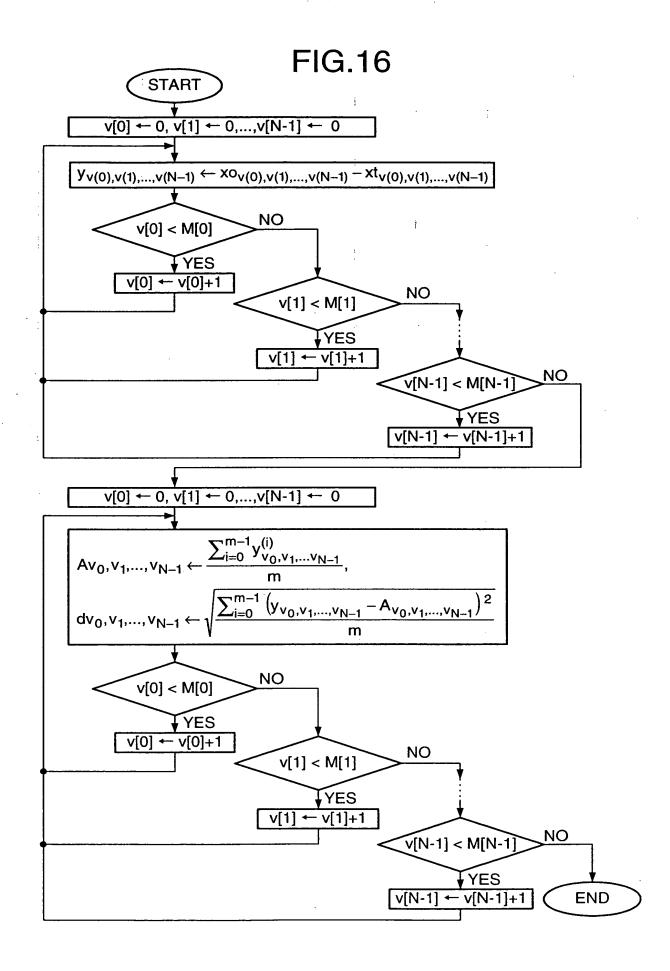


FIG.17

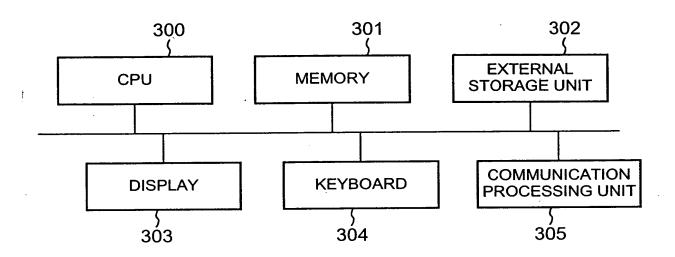


FIG.18

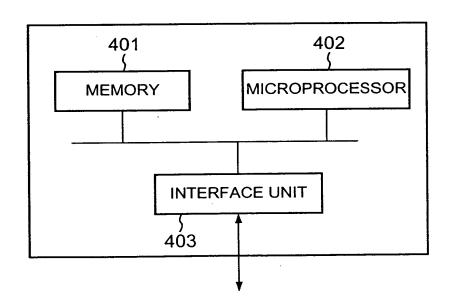


FIG 19

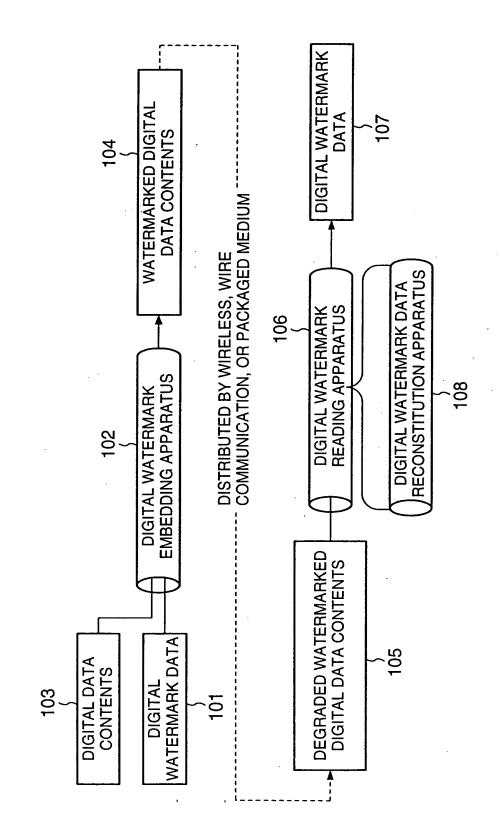


FIG.20

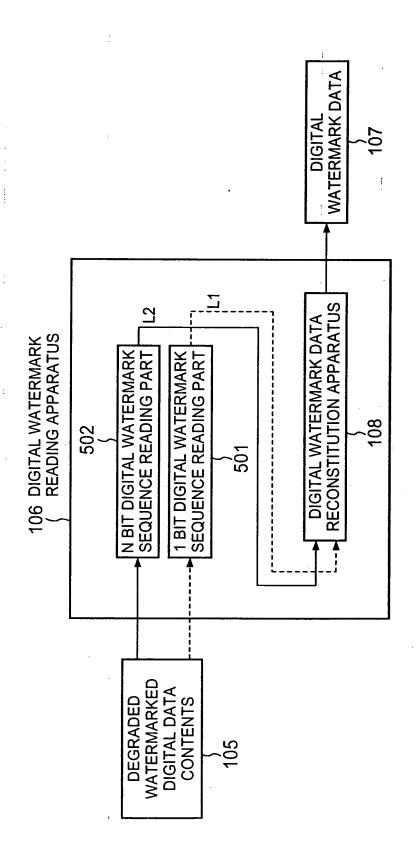


FIG.21

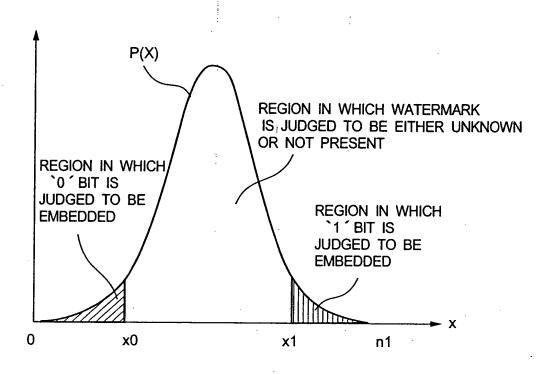


FIG.22

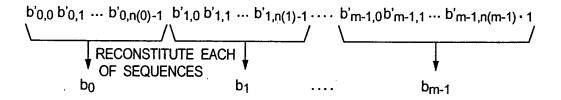


FIG.23

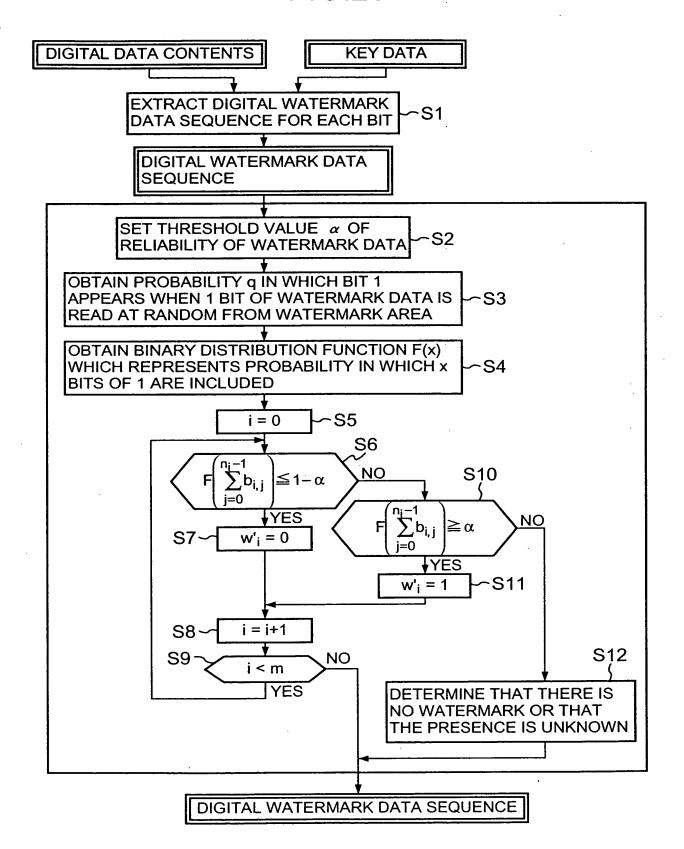


FIG.24

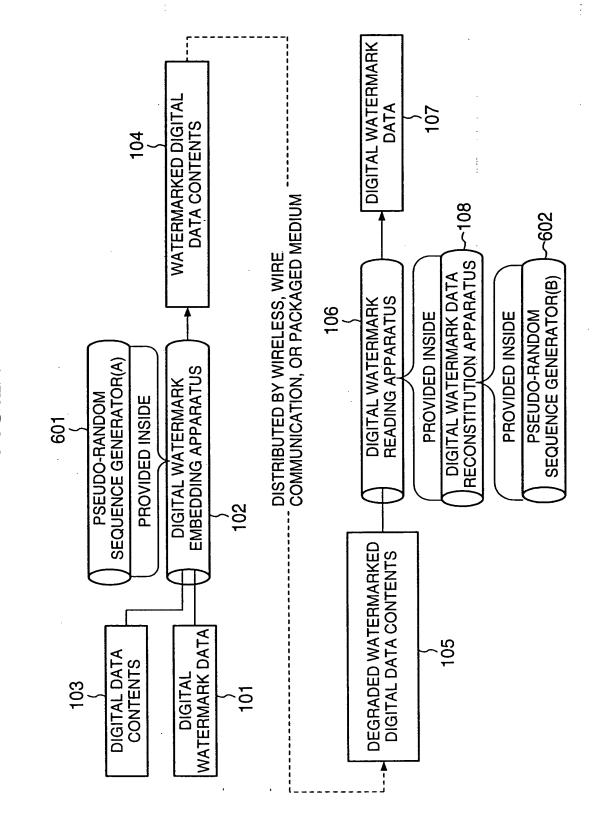


FIG.25

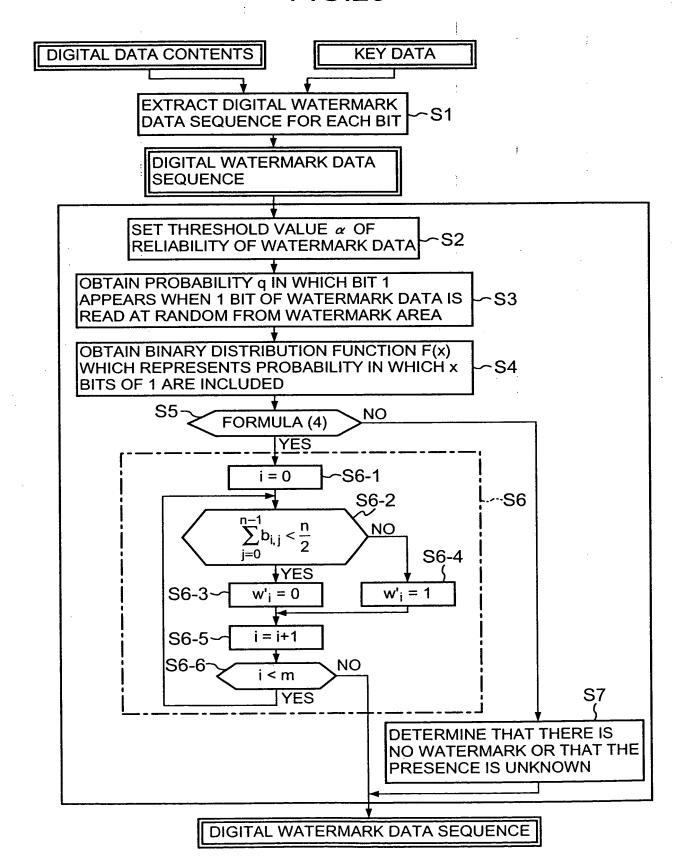


FIG.26 START GENERATE $\{r_{i,j}^i\}$ FROM KEY DATA ·S8 SET THRESHOLD VALUE α OF S2 RELIABILITY OF WATERMARK DATA OBTAIN PROBABILITY q IN WHICH BIT 1 APPEARS WHEN 1 BIT OF WATERMARK DATA IS **S**3 READ AT RANDOM FROM WATERMARK AREA OBTAIN BINARY DISTRIBUTION FUNCTION F(x) WHICH REPRESENTS PROBABILITY IN WHICH'X ·S4 BITS OF 1 ARE INCLUDED ~S9 i = 0YES i = 0**S5** NO j < n $b'_{i,i} = b_{i,i} \oplus r'_{i,i}$ NO FORMULA (4) j = j+1YES i = i+1i = 0NO i < m YES $\sum_{i=0}^{n} b'_{i,j} < \frac{n}{2}$ NO **VES** $w'_i = 0$ $w'_i = 1$ S6---i = i+1NO i < m YES DETERMINE THAT THERE IS NO WATERMARK OR THAT THE PRESENCE IS UNKNOWN S7

END

FIG.27

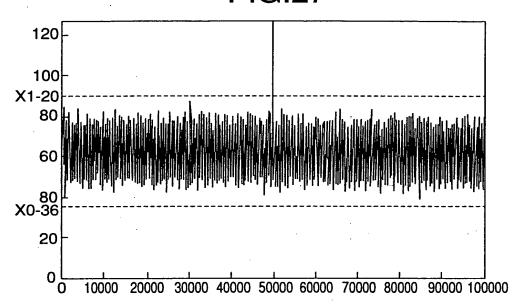


FIG.28

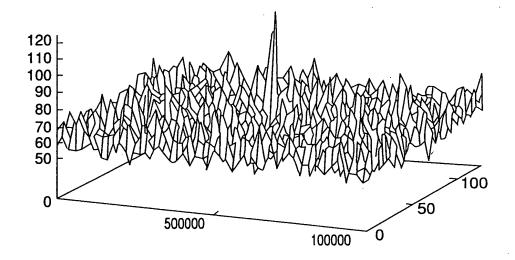


FIG. 29 PRIOR ART

WATERMARK READING

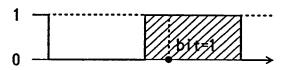


FIG.30

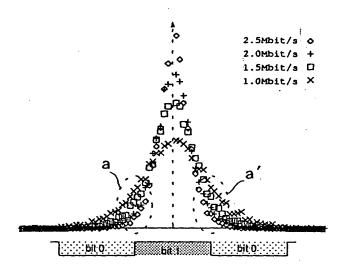


FIG. 31

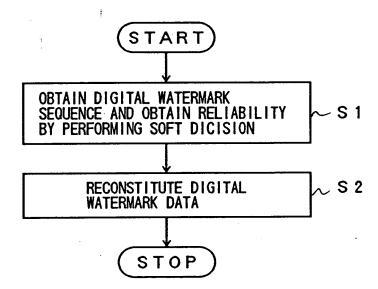


FIG. 32

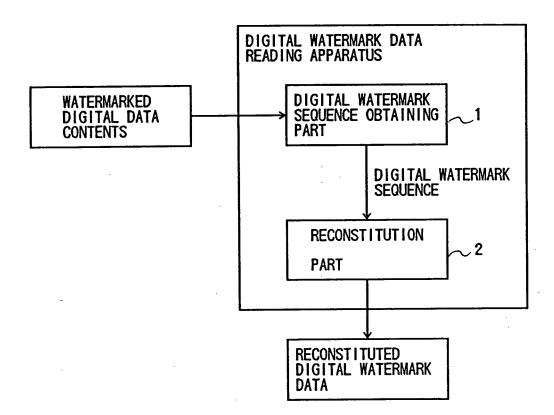


FIG. 33

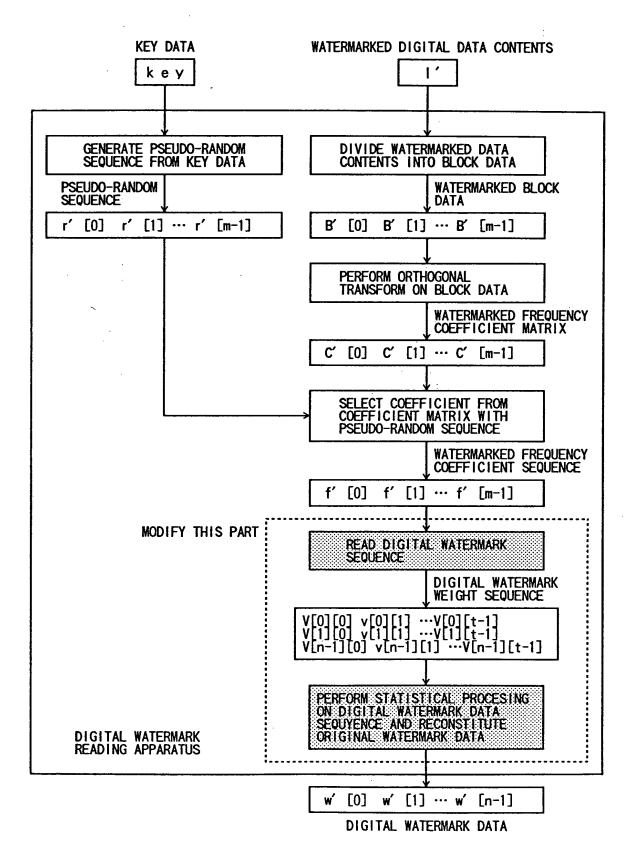


FIG.34

